

AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 2, 7, 18 and 19 as follows. Insertions are shown underlined while deletions are struck-through. Please cancel Claims 5, 11-13 and 17.

1 (currently amended): A polishing pad used for chemical mechanical polishing having comprising:

a polishing region; and

a light-transmitting region used in chemical mechanical polishing, wherein the light transmitting region satisfies that the difference constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$(\Delta T = T_0 - T_1)$$

wherein ΔT (%) is a difference between T₀ (%) and T₁ is within 10(%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T₁ is the light transmittance (%) of the material of the light-transmitting region as measured at the measurement wavelength λ after dipping the material in a KOH aqueous solution at pH 11 for 24 hours and T₀ is the light-transmittance (%) of the material as measured at the measurement wavelength λ before the dipping,

wherein the material of the light-transmitting region is formed from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) polyester polyol formed from adipic acid, hexane diol, and ethylene glycol.

2 (currently amended): A polishing pad used for chemical mechanical polishing having comprising:

a polishing region; and

a light-transmitting region used in chemical mechanical polishing, wherein the light transmitting region satisfies that the difference constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$(\Delta T = T_0 - T_1)$$

wherein ΔT (%) is a difference between T₀ (%) and T₁ is within 10(%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T₁ is the light transmittance (%) of the material of the light-transmitting region as measured at the measurement wavelength λ after dipping the material in an H₂O₂

Appl. No. : 10/598,717
Filed : September 8, 2006

aqueous solution at pH 11 for 24 hours and T_0 is the light-transmittance (%) of the material as measured at the measurement wavelength λ before the dipping,

wherein the material of the light-transmitting region is formed from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) polyester polyol formed from adipic acid, hexane diol, and ethylene glycol.

3 (previously presented): The polishing pad according to claim 1, wherein the material forming the light-transmitting region is non-foam.

4 (previously presented): The polishing pad according to claim 1, wherein the material forming the polishing region is fine-cell foam.

5 (canceled):

6 (previously presented): The polishing pad according to claim 1, wherein the polishing region at the polishing side is provided with grooves.

7 (currently amended): A method of manufacturing a semiconductor device, which comprises:

(i) providing a polishing pad comprising:

a polishing region; and

a light-transmitting region constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$\Delta T = T_0 - T_1$$

wherein ΔT (%) is a difference between T_0 (%) and T_1 (%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%) of the material of the light-transmitting region as measured at the measurement wavelength λ after dipping the material in a KOH aqueous solution at pH 11 for 24 hours and T_0 is a light-transmittance (%) of the material as measured at the measurement wavelength λ before the dipping.

wherein the material of the light-transmitting region is formed from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) polyester polyol formed from adipic acid, hexane diol, and ethylene glycol; and

(ii) a step of polishing the surface of a semiconductor wafer with the polishing pad according to claim 1.

Appl. No. : 10/598,717
Filed : September 8, 2006

8 (previously presented): The polishing pad according to claim 2, wherein the material forming the light-transmitting region is non-foam.

9 (previously presented): The polishing pad according to 2, wherein the material forming the polishing region is fine-cell foam.

10 (previously presented): The polishing pad according to 3, wherein the material forming the polishing region is fine-cell foam.

11-13 (canceled):

14 (previously presented): The polishing pad according to claim 2, wherein the polishing region at the polishing side is provided with grooves.

15 (previously presented): The polishing pad according to claim 3, wherein the polishing region at the polishing side is provided with grooves.

16 (previously presented): The polishing pad according to claim 4, wherein the polishing region at the polishing side is provided with grooves.

17 (canceled):

18 (currently amended): A method of manufacturing a semiconductor device, which comprises:

(i) providing a polishing pad comprising:
a polishing region; and
a light-transmitting region constituted by a material having a ΔT of 10 (%) or less
which is defined by the equation

$$\Delta T = T_0 - T_1$$

wherein ΔT (%) is a difference between T_0 (%) and T_1 (%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%) of the material of the light-transmitting region as measured at the measurement wavelength λ after dipping the material in an H_2O_2 aqueous solution at pH 11 for 24 hours and T_0 is a light-transmittance (%) of the material as measured at the measurement wavelength λ before the dipping,

wherein the material of the light-transmitting region is formed from (i)
polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) polyester polyol
formed from adipic acid, hexane diol, and ethylene glycol; and

Appl. No. : 10/598,717
Filed : September 8, 2006

(ii) a step of polishing the surface of a semiconductor wafer with the polishing pad according to claim 2.

19 (currently amended): A polishing pad for chemical mechanical polishing comprising:
a polishing region having a through-hole in an axial direction; and
a light-transmitting region fitted in the through-hole, said light-transmitting region being constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$\Delta T = T_0 - T_1$$

satisfying thatwherein ΔT which is a difference between T_0 (%) and T_1 (%) is within 10 percentage points as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%)of the material of the light-transmitting region as measured at a measurement wavelength λ after dipping the material for 24 hours in a KOH aqueous solution having a pH of 11 or in an H_2O_2 aqueous solution having pH of 4, and T_0 is a light-transmittance (%)of the material as measured at the measurement wavelength λ before the dipping,

wherein the material of the light-transmitting region is formed from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) polyester polyol formed from adipic acid, hexane diol, and ethylene glycol.

20 (previously presented): The polishing pad according to claim 19, wherein the material forming the light-transmitting region is non-foam.

21 (previously presented): The polishing pad according to claim 19, further comprising a cushion layer laminated on a back side of the polishing region opposite to its polishing side, wherein the cushion layer has a through-hole at the same position as the light-transmitting region with respect to the axial direction.

22 (previously presented): The polishing pad according to claim 21, wherein the cushion layer is laminated on the polishing region using a double-coated tape.

23 (previously presented): The polishing pad according to claim 19, wherein the material is a polyurethane resin comprising an organic isocyanate, a polyol, and a chain extender.

Appl. No. : **10/598,717**
Filed : **September 8, 2006**

24 (previously presented): The polishing pad according to claim 23, wherein in the polyurethane resin, a ratio of the number of isocyanate groups of the organic isocyanate to the number of functional groups of the polyol and the chain extender in total is 0.95 to 1.15.